

### **REMARKS/ARGUMENTS**

In the Office Action mailed on 22 August 2007, the Examiner rejected claims 1-8, 10-11, and 13-32. Claims 9, 12, and 33-36 had previously been canceled, and claims 1-8, 10-11, and 13-32 are presently under consideration. Applicant respectfully requests reconsideration of the application by the Examiner in light of the following remarks.

Applicant respectfully traverses the rejection of claims 1-8, 10-11, and 13-32 under 35 USC 103(a) over Suzuki US4877717 or Chandross US3809732 in view of Nishimura US6828078. The rejection referenced earlier reasons of record and added several new paragraphs.

#### **Independent Claim 1**

With respect to claim 1, in Suzuki and Chandross, the monomers are high refractive index (RI) components, and the exposed areas form the core. In Nishimura, the core is formed in the unexposed areas but by a different mechanism: decomposing high RI polymers by exposure (which leads to evaporation).

Nishimura describes generation of a "low RI (reactive index)" area by locally generating (by photo patterning) an acid which decomposes the high RI component (A) which then must be removed from the system by volatilization. The decomposition only reduces the molecular weight of the high RI component so it can volatilize - the decomposition does not change the RI. Once volatilized, the region has less of the high RI component-A and therefore a lower RI. Decomposition itself does not change the RI of component-A or the region. The RI only decreases when component-A is removed. The degree of decomposition of component-A and resulting amount volatilized (and subsequent change in RI) probably is effected by the amount of photoacid present, and the photoacid may be able to move around (or diffuse) a bit, but decomposition/volatilization of component-A is what causes the RI change. Uncured monomers are not described or present in Nishimura's patent, and no diffusion is described as forming index contrast areas.

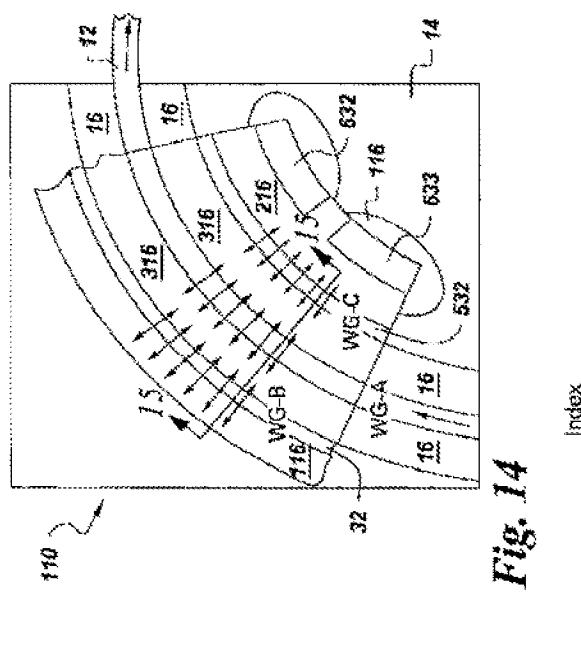
It is not clear to Applicant the reason why it would be obvious for one to combine teachings from the embodiment of Nishimura regarding the decomposition of high RI polymer with the teachings of Suzuki and Chandross and their high RI monomers to arrive at Applicant's claimed embodiments.

#### **Independent Claim 16**

Furthermore, with respect to the "diffusion source regions" of claims 11, 16, and claims depending therefrom, Applicant respectfully directs the Examiner's attention to FIGs. 14-19

which are described in paragraphs 60-65 with paragraph 60 being copied below for ease of reference (with emphasis):

[0060] FIG. 14 is a top view of a curved waveguide **10** core **12** and cladding **14** including index contrast regions in accordance with another embodiment of the present invention. The embodiment of FIG. 14 is designed for enhancing the amount of monomer diffusion into selected catalyst activated (exposed) areas by providing additional monomer diffusion source regions near one or both sides of a bend radius. In the embodiment of FIG. 14 one source of monomer diffusion is from core **12** itself and a second source of monomer diffusion **32** is from an unexposed region adjacent to the side cladding surrounding the core. Both sources can be fabricated simultaneously by a masking process, for example.



Diffusion source regions are described in claims 11 and 16 as being patterned in combination with the core region and are not the core regions themselves (see claim 16 for example: one portion of the unexposed area comprising the core region **and another portion** of the unexposed area comprising a diffusion source region).

In other words, Applicant has described and claimed diffusion source regions that are a third region in addition to the unexposed core regions and the exposed bulk regions. Applicant can find no such regions either taught or suggested in any of the applied references, whether taken individually or in combination. Nishimura does not teach or suggest such additional regions and, because Chandross and Suzuki form the core by the exposed area, such

additional diffusion source regions would not be feasible with those embodiments.

Applicant did not see a response to the above arguments in the latest office action. Applicants reiterate herein that, as stated above in Applicant's remarks, the diffusion source regions of claim 16 are a separate part of the pattern, and no such regions are taught or suggested by any reference or combination of references.

The third region (the diffusion source region) recited by Applicant cannot be provided by Nishimura. Because Nishimura decomposes high RI components in the exposed area which evaporate leaving the area with lower RI, no polymerization occurs. This third region is also not feasible in Suzuki or Chandross because polymerization does not take place in the cladding.

No combination of the applied references polymerizes monomers in the cladding (low RI) portion, and thus no combination can effect RI in said portion by controlling the amount of diffusion/polymerization into the exposed cladding by supplying the additional third (unexposed) region.

Summary

Accordingly, Applicant respectfully submits that claim 1, and claims 2-8, 10-11, and 13-15 which depend therefrom, claim 16, and claims 17-32 which depend therefrom define allowable subject matter over the applied references.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Should the Examiner believe that anything further is needed to place the application in better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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